

OPERATING IN HARSH CONDITIONS IN WESTERN SIBERIA

By Konstantin Shabanov



The general difficulties encountered in not only living but working in remote environments such as Alaska, Finland, Greenland, and Western Siberia make for an interesting day for those dwelling in these remote areas. These hard-to-reach, harsh weather locations pose severe challenges for personnel, machinery, and transportation given some of the mountain ranges in the taiga region offer some of the world's largest range in temperature differentials. The seasonal temperature differential can reach up to 158°F (70°C) or more – from 86°F (30°C) in summer to -49°F (-45°C) in winter.

Opposite challenges such as strong winds, dust and high humidity in the summer should be considered besides the long snowfalls with blizzards brought by the winter season. The former can have a direct impact on compressors through cooler blockages, increased air filter replacement, and a larger volume of water and condensate to the point of use. The latter can result in metal fatigue, frozen pipelines, and reduced capacity. Service and maintenance of operating equipment in these harsh environments can be an additional challenge due to the lack of normal roads and infrastructure. This forces operational companies to place an increased emphasis on drill rig compressors to be rugged, hardworking, and reliable.

Dangerous Conditions Require Efficient Machinery

In the Kuzbass region in Western Siberia, for example, mining and coal seam drilling operations are some of many typical applications for air compressors. These applications require a high degree of safe working conditions to reduce the risk of sudden gas outbursts at the working face of coal mines, degassing of the coal seam and degassing of the goaf. The goaf refers to the part of the mine from which the mineral has been partially or completely removed. Both methods require the shortest possible drilling time.

Since the mining and geological conditions of the mine fields used for the construction of degassing wells are faced with highly fractured zones, the use of standard technologies for removing drill cuttings from the bottom of wells is energy-consuming and inefficient. The Methane Degassing and Utilization Department of SUEK-Kuzbass uses the technology of percussive-rotary drilling with compressed air, as this technology provides high rates of well drilling and reduced costs. The main distinguishing feature of this technology is the destruction of the rock whilst simultaneously impacting and rotating.

Taking the environmental and application constraints mentioned above, Sullair compressors are the compressor of choice. The reliability, durability, and performance of Sullair compressors with a proven track record of thousands of operational hours in harsh working environments provide peace of mind. Sullair dual pressure air compressors provide the right pressure and flow and are a perfect match for shallow, medium, and deep drilling based on any requirements. The cold weather packages allow Sullair compressors to withstand extreme cold conditions and reduce unplanned downtime.

Extra Protection for More Efficiency

What's more, Sullair compressors can be fitted with Optimal Air[®] inlet filters with a 99.9% efficiency to effectively deal with harsh, hot, dusty environments during the summer. AWF[®], the multi-viscosity Sullair All Weather Fluid offers exceptional start up and performance in hot weather and cold climates alike. Due to some remote locations in Western Siberia, the Air Linx[®] remote monitoring solution is ideal in giving you real time alerts, preventative warnings, and maintenance and asset tracking. These two solutions further provide an extra layer of sustainability and reliability for the efficient functioning of an air compressor in harsh conditions.

